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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,685	07/27/2006	Tobias Lang	3752	8420
7590 Striker Striker & Stenby 103 East Neck Road Huntington, NY 11743			EXAMINER BHAT, ADITYA S	
			ART UNIT 2863	PAPER NUMBER
			MAIL DATE 01/04/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/587,685	LANG, TOBIAS	
	<b>Examiner</b>	<b>Art Unit</b>	
	Aditya S. Bhat	2863	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/27/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status***

1. Claims 1-12 are currently pending in this application. Claims 1-12 are currently rejected.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

3. The disclosure is objected to because of the following informalities: The various sections of the specification do not contain the proper headings. Below is an outline of the proper contents and headings of the specification.

### **Content of Specification**

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),

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and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
- (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
  - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements,

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compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

The paragraphs of the specification, other than in the claims or abstract, may be numbered at the time the application is filed, and should be individually and consecutively numbered using Arabic numerals, so as to unambiguously identify each paragraph. The number should consist of at least four numerals enclosed in square brackets, including leading zeros ( e.g., [0001 ] ). The numbers and enclosing brackets should appear to the right of the left margin as the first item in each paragraph, before the first word of the paragraph, and should be highlighted in bold. It should also be noted that the abstract erroneously contains the term "figure 6".

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Appropriate correction is required.

***Claim Objections***

4. Claim 1 is objected to because of the following informalities:

In claim 1, to avoid problems of antecedent basis, "the volume flow" should be changed to --a volume flow--.

Appropriate correction is required.

***Information Disclosure Statement***

5. The information disclosure statement (IDS) submitted on 7/27/2006 was received. The submission is in compliance with the provisions of 37 CFR 1.97 and 37 CFR 1.98. Accordingly, the information disclosure statement has been considered by the examiner.

***Drawings***

6. The drawings submitted on 7/27/2006 are in compliance with 37 CFR § 1.81 and 37 CFR § 1.83 and have been accepted by the examiner.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Baumel (USPN 4,232,548).



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With regards to claim 1, Baumuel (USPN 4,232,548) teaches an ultrasonic flow sensor (16 fig 2), particularly for measuring a volume flow (16) or mass flow of a fluid that flows through a pipeline (18; col. 3, lines 65-68) and includes two ultrasonic converters/transducers (12, 14) that are offset in the direction of flow and each transmit a periodic ultrasonic signal to the other ultrasonic converter/transducer (Col. 4, lines 32-37) and a control and evaluation unit (16, 24) that detects several reception times per ultrasonic signal when an ultrasonic signal is received by one of the ultrasonic converters (Col. 4, lines 43-50), a measured quantity being determined from one of the reception times (col. 3, lines 64-65), wherein the control and evaluation circuit includes at least two counters (72, 74), the first counter counting the full intervals of a first signal at least until the first reception time of an ultrasonic signal (72; col. 8, lines 57-61), and the second counter determining a time interval between a first switchover/reception time and a second switchover/reception time of the signals out of several paired switchover/reception times. (74; Col. 8-9, lines 62-68 & 1-5)

With regards to claim 2, Baumuel (USPN 4,232,548) teaches a first operating mode, the first signal is an ultrasonic signal that is sent out simultaneously (in phase) with the other ultrasonic signal, *or*, in a second operating mode, it is a reference signal that is generated out of the same clock pulse as the ultrasonic signal. (Col. 5-6 lines 66-67 & 1-3)

With regards to claim 3, Baumuel (USPN 4,232,548) teaches each of the paired reception times includes a switchover/reception time of the signal (S2, P) and a subsequent reception time of the ultrasonic signal (S1). (Col. 3, lines 63-66)

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With regards to claim 4, Baumuel (USPN 4,232,548) teaches the control and evaluation circuit checks to determine whether the first reception time of the ultrasonic signal is temporally closer to the preceding *or subsequent switchover/reception time of the signal than a specified time threshold*(Col. 9, lines 55-57), whereby, *in the first case*, the first counter counts the period from the first switchover/reception time until the switchover/reception time of the signal that precedes the reception time of the ultrasonic signal and, *in the other case*, *it counts until the switchover/reception time that follows the first reception time of the ultrasonic signal* (Col. 9, lines 45-57).

With regards to claim 5, Baumuel (USPN 4,232,548) teaches the second counter (5b) is an up-down counter that counts either up or down, depending on a series of paired reception times (Col. 11, lines 47-50)

With regards to claim 6, Baumuel (USPN 4,232,548) teaches the first counter (5a) is an up-down counter that can receive a positive *or* a negative carry-over from the second counter (Col. 11, lines 45-46)

With regards to claim 7, Baumuel (USPN 4,232,548) teaches the second counter accumulates the period of the intervals defined by p pairs of reception times, p being a square number. (Col 8-9, lines 57-67 & 1-4) The programmable N counter measures N number of cycles thus capable of being set to a square number. If applicant disagrees with this interpretation then applicant should elaborate on why using a square number of reception pairs would be novel as opposed to a non-square number.

With regards to claim 8, Baumuel (USPN 4,232,548) teaches, after the period defined by p pairs of intervals is measured, the counter status of the second counter



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(EOC) is averaged by performing a shift register operation, by eliminating binary places, or via a modified interpretation of the weight of the binary places. (Col. 10, lines 1-11) It should be noted that in digital circuits a shift register is a group of flip-flops set up in a linear fashion.

With regards to claim 9, Baumel (USPN 4,232,548) teaches method for determining the transit time difference between two ultrasonic signals (col. 3, lines 38-39) from an ultrasonic flow sensor with two ultrasonic converters/transducers (12,14) that are offset in the direction of flow (fig 2) and each transmit an ultrasonic signal to the other ultrasonic converter (col. 3, lines 38-40) and a control and evaluation circuit (16) that detects several reception times per ultrasonic signal when an ultrasonic signal is received by one of the ultrasonic converters (Col. 3, lines 63-67), a measured quantity (S) being determined from one of the reception times (col. 4, lines 1-5), wherein, using a first counter(72), a period of the full intervals of a signal is counted at least until the first reception time of an ultrasonic signal (72;col. 8, lines 57-61), and, using a second counter(74), the time intervals between a first reception time and a second reception time out of several pairs reception times being determined. (74; Col. 8-9, lines 62-68 & 1-5)

With regards to claim 10, Baumel (USPN 4,232,548) teaches the second counter measures the periods between several paired instants, each of which includes a switchover/reception time of the signal and a reception time of the ultrasonic signal (Col. 5, lines 9-15)

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With regards to claim 11, Baumuel (USPN 4,232,548) teaches, a check is carried out to determine whether the first reception time of the ultrasonic signal is temporally closer to the preceding or subsequent switchover/reception time of the signal than a specified time (Col. 9, lines 55-57) whereby, *in the first case*, the first counter counts the period from the first switchover/reception time until the switchover/reception time of the signal that precedes the reception time of the ultrasonic signal and, *in the other case*, it counts until the switchover/reception time that follows the first reception time of the ultrasonic signal. (col. 9, lines 44-57)

With regards to claim 12, Baumuel (USPN 4,232,548) teaches a digital signal from the evaluation circuit that displays the receipt of a reception event is sampled with a sampling signal, the frequency of which is markedly higher than the reciprocal of the temporal inaccuracy of the signal (Col. 13, lines 19-26).

### **Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wallace et al. (USPN 4,515,021) teaches a intervalometer time measurement apparatus and method.

O'Neil (4,583,410) teaches a timing circuit for acoustic flow meters,

Fletcher-Haynes (USPN 5,777,238) teaches a Driver receiver for use with ultrasonic flowmeters.

Suginouchi et al. (USPN 6,925,891) teaches ultrasonic flowmeters and of measuring flow volume.

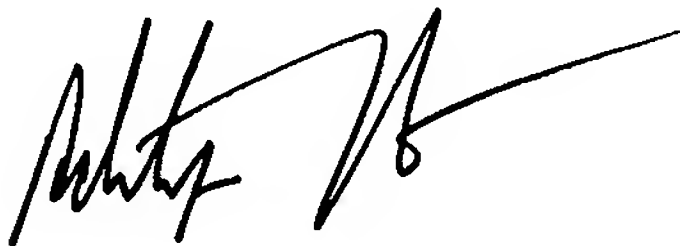
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Chang (USPN 6,089,104) teaches a ultrasonic flow meter using transit time across tube chords for determining the flow rates.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S. Bhat whose telephone number is 571-272-2270. The examiner can normally be reached on M-F 9-5:30.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Aditya Bhat  
December 31, 2007